Algebra II GHP
Unit 12 Test Review

Name_____
Date_____

I. Radical Equations: Solve for the variable. Check your solution.

1) $\sqrt{7x-13}-6=0$

2) $-\sqrt{3x-7}-5=4$

3) $3\sqrt{5x}-13=-1$

4) $\sqrt{2x+8}=x$

5) $\sqrt{5x+9}=\sqrt{x}-3$

6) $\sqrt{6x-8}=x$

7) $2\sqrt{x+2}-3=x$

8) $\sqrt[3]{x^2+6x}=3$

II. If y varies directly as x,

7) What is the general form of the equation?

8) If x = 6 when y=21, find the value k and write the direct variation equation.

9) If x = 15 when y = -4, Find x when y = 6.

III. If y varies inversely as x,

10) What is the general form of the equation?

11) If x = 6 when y = 21, Find the value of k and write the inverse variation equation.

12) If x = 15 when y = -2, find x when y = 7.

III. If y varies jointly as x and z and inversely as w,

13) What is the general form of the equation?

14) If y = 6, x = -4, z = 3 and w = 4, find the value of k and write the combined variation equation.

15) Using the equation and/or k from #14, find the value of w when y = 4, x = 6, and z = 3.

IV. Variation Word Problems

16) The heat loss through a glass window varies jointly as the area of the window and the difference between the inside and outside temperatures. The heat loss through a window with an area of 3 square meters is 720 BTU when the temperature difference is 15 degrees Celsius.

a) Find the constant of variation.

b) Write the joint variation equation.

c) Using the equation and/or k from a) and b), find the heat loss through a window with area 4.5 square meters when the temperature difference is 12 degrees Celsius.

17) The time required to travel a given distance varies inversely as the speed of travel. If a trip can be made in 3.6 hours as a speed of 70 km/h, how long will it take to make the same trip at 90 km/h?